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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/579,093

05/12/2006

Koichi Sato

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08/18/2010

FITZPATRICK CELLA HARPER & SCINTO

1290 Avenue of the Americas

NEW YORK, NY 10104-3800

EXAMINER

BELYAEV, YANA

ART UNIT

PAPER NUMBER

1791

MAIL DATE

DELIVERY MODE

08/18/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/579,093	Applicant(s) SATO ET AL.	
	Examiner YANA BELYAEV	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16 and 19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16 and 19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>6/7/2010</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Response to Arguments

1. Applicant's arguments, filed 7 June 2010, have been fully considered and are persuasive. Therefore, the previous rejection has been withdrawn.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

1. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Application 2002/0180854 (Sato hereinafter) in view of JP 2003-345828 (Nakazawa hereinafter) in view of US Patent Application 2003/0122889 (Okuda hereinafter) and further in view of US Patent 5,342,440 (Wickramanayake hereinafter).

US Patent Application 2006/0281870 is used as a translation for JP 2003-345828. All citations refer to US Patent Application 2006/0281870.

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Regarding claim 16, Sato discloses a process for ejecting liquid droplets on a recording medium to produce a high quality image (abstract), which comprises the steps of:

preparing plural kinds of liquid compositions each comprising a block polymer having a polyoxyalkylene repeating structure (paragraph 65) and a liquid medium, namely water (paragraph 129);

ejecting a first of the plural kinds of liquid compositions to apply the liquid composition to a recording medium (paragraph 62);

imparting a thermal stimulus, specifically temperature change, to the applied liquid composition to increase the viscosity of the liquid composition thereby forming a three-dimensional basic pattern (paragraph 62);

imparting an electromagnetic wave stimulus to the formed three-dimensional basic pattern to form a pattern (paragraph 130); wherein Sato discloses that two or more of the stimuli may be combined (paragraph 133); and

ejecting a second liquid composition onto the pattern (paragraph 49).

While Sato does disclose a block polymer of polyoxyalkylene repeating structure (paragraph 65), Sato does not disclose a polyalkenyl ether repeating structure.

However, Nakazawa, which teaches a block polymer compound, discloses a block polymer compound useful as various kinds of functional materials (paragraph 1), which is preferably comprised of repeating units of either polyalkenyl ether, not polyoxyalkylene (paragraph 14).

Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to have substituted polyoxyalkylene, which is disclosed by Sato, for polyalkenyl ether

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since Nakazawa states that a block copolymer containing a repeating unit of polyalkenyl ether is preferable in terms of dispersion and easiness in formation of a polymer micelle and easiness in incorporation of a functional substance, while polyoxyalkylene is not preferable (paragraph 14).

Furthermore, Sato does not disclose that the second liquid composition has a different color than the first liquid composition.

In a similar field of endeavor, however, Okuda discloses matrix-array heads corresponding to the four ink colors of yellow, magenta, cyan and black having ejectors for each color arranged in parallel on the carriage. Dots of the four colors are superimposed on the sheet of recording paper (paragraph 147).

It would have been obvious to combine the process disclosed by Kabushiki in view of Sato with the step disclosed by Okuda since it allowed for full-color images to be recorded (Okuda, paragraph 147).

Sato also does not disclose that the liquid composition having different colors are a water-based liquid composition and an oil-based liquid composition.

However, in a similar field of endeavor, Wickramanayake teaches water insoluble black dyes printed adjacent to color inks containing water-soluble dyes, bleed does not occur between the black and the color dyes (abstract).

Thus, it would have been obvious for one of ordinary skill in the art at the time of the invention to have combined Wickramanayake with Sato. The rationale to do so, provided by Wickramanayake, would have been the motivation that by making liquid compositions having different colors a water based liquid composition and an oil based liquid composition, bleeding between the colors is prevented (Wickramanayake, abstract).

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2. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sato in view of Nakazawa in view of Okuda in view of Wickramanayake as applied to claim 16 above, and further in view of US Patent 6,464,342 (Kubota hereinafter).

Regarding claim 19, Sato does not disclose that the three-dimensional pattern is produced such that the layers different in modulus are alternatively stacked.

However, in a similar field of endeavor, Kubota teaches that a three dimensional pattern is produced such that layers different in modulus are alternatively stacked (col. 4, lines 13-16)

It would have been obvious to one of ordinary skill in the art at the time of the invention to have combined the teachings of Sato with Kubota. The rationale to do so, provided by Kubota, would have been the motivation that this results in increased strength and more durability (col 4, lines 30-35).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YANA BELYAEV whose telephone number is (571)270-7662. The examiner can normally be reached on M-Th 8:30am - 6pm; F 8:30 am- 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Daniels can be reached on (571) 272-2450. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Y. B./
Examiner, Art Unit 1791

/Jason L Lazorcik/
Primary Examiner, Art Unit 1791